

seqlist.txt

SEQUENCE LISTING

<110> ASHMAN, Claire
ELLIS, Jonathan Henry

<120> IMMUNOGENIC COMPOSITION COMPRISING AN
IL-13 ELEMENT AND T CELL EPITOPES, AND ITS THERAPEUTIC USE

<130> PG4938

<140> Not Yet Assigned

<141> 2005-02-25

<150> PCT/GB03/03703

<151> 2003-08-28

<150> GB 0304672.9

<151> 2003-02-28

<150> GB 0220212.5

<151> 2002-08-30

<160> 68

<170> FastSEQ for windows Version 4.0

<210> 1

<211> 112

<212> PRT

<213> Homo sapien IL-13

<400> 1

Gly	Pro	Val	Pro	5	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu
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Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				
Met	Leu	Ser	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75					80	
Ser	Leu	His	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
				85					90				95		
Asp	Leu	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn
			100					105					110		

<210> 2

<211> 111

<212> PRT

<213> Murine IL-13

<400> 2

Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu	Thr	Leu	Lys	Glu	Leu
1				5					10					15	
Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Thr	Pro	Leu	Cys	Asn
			20					25					30		
Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala	Gly	Gly	Phe	Cys	Val
		35					40				45				
Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys	Asn	Ala	Ile	Tyr	Arg
	50					55					60				
Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg	Lys	Ala	Pro	Thr	Thr
65					70				75					80	
Val	Ser	Ser	Leu	Pro	Asp	Thr	Lys	Ile	Glu	Val	Ala	His	Phe	Ile	Thr
				85					90					95	

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Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 100 105 110

<210> 3
 <211> 111
 <212> PRT
 <213> Porcine IL-13

<400> 3
 Gly Pro Val Pro Pro His Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu
 1 5 10 15
 Leu Val Asn Ile Thr Gln Asn Gln Lys Thr Pro Leu Cys Asn Gly Ser
 20 25 30
 Met Val Trp Ser Val Asn Leu Thr Thr Ser Met Gln Tyr Cys Ala Ala
 35 40 45
 Leu Glu Ser Leu Ile Asn Ile Ser Asp Cys Ser Ala Ile Gln Lys Thr
 50 55 60
 Gln Arg Met Leu Ser Ala Leu Cys Ser His Lys Pro Pro Ser Glu Gln
 65 70 75 80
 Val Pro Gly Lys His Ile Arg Asp Thr Lys Ile Glu Val Ala Gln Phe
 85 90 95
 Val Lys Asp Leu Leu Lys His Leu Arg Met Ile Phe Arg His Gly
 100 105 110

<210> 4
 <211> 112
 <212> PRT
 <213> Bovine IL-13

<400> 4
 Ser Pro Val Pro Ser Ala Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Val Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Leu Asn Leu Thr Ser Ser Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Ser Ile Ser Asn Cys Ser Val Ile Gln Arg Thr Lys Lys
 50 55 60
 Met Leu Asn Ala Leu Cys Pro His Lys Pro Ser Ala Lys Gln Val Ser
 65 70 75 80
 Ser Glu Tyr Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Leu Lys
 85 90 95
 Asp Leu Leu Arg His Ser Arg Ile Val Phe Arg Asn Glu Arg Phe Asn
 100 105 110

<210> 5
 <211> 111
 <212> PRT
 <213> Canine IL-13

<400> 5
 Ser Pro Val Thr Pro Ser Pro Thr Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Ala Ser Leu Cys Asn Gly Ser Met Val
 20 25 30
 Trp Ser Val Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser
 35 40 45
 Leu Ile Asn Val Ser Asp Cys Ser Ala Ile Gln Arg Thr Gln Arg Met
 50 55 60
 Leu Lys Ala Leu Cys Ser Gln Lys Pro Ala Ala Gly Gln Ile Ser Ser
 65 70 75 80
 Glu Arg Ser Arg Asp Thr Lys Ile Glu Val Ile Gln Leu Val Lys Asn
 85 90 95
 Leu Leu Thr Tyr Val Arg Gly Val Tyr Arg His Gly Asn Phe Arg
 100 105 110

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<210> 6
 <211> 111
 <212> PRT
 <213> Rat IL-13
 <400> 6

Gly	Pro	Val	Arg	Arg	Ser	Thr	Ser	Pro	Pro	Val	Ala	Leu	Arg	Glu	Leu
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Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Lys	Thr	Ser	Leu	Cys
			20					25					30		
Asn	Ser	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Thr	Ala	Gly	Gly	Phe	Cys
		35					40					45			
Ala	Ala	Leu	Glu	Ser	Leu	Thr	Asn	Ile	Ser	Ser	Cys	Asn	Ala	Ile	His
	50					55					60				
Arg	Thr	Gln	Arg	Ile	Leu	Asn	Gly	Leu	Cys	Asn	Gln	Lys	Ala	Ser	Asp
65					70				75					80	
Val	Ala	Ser	Ser	Pro	Pro	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Ile
				85					90					95	
Ser	Lys	Leu	Leu	Asn	Tyr	Ser	Lys	Gln	Leu	Phe	Arg	Tyr	Gly	His	
			100					105					110		

<210> 7
 <211> 111
 <212> PRT
 <213> Cynomolgus
 il-13

Ser	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75					80	
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
				85					90					95	
Asp	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Gln	Phe	Asn	
			100					105					110		

<210> 8
 <211> 112
 <212> PRT
 <213> Rhesus IL-13

Ser	Pro	Val	Pro	Arg	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75					80	
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
				85					90					95	
Asp	Leu	Leu	Val	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn
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seqlist.txt

<210> 9
 <211> 112
 <212> PRT
 <213> Marmoset IL-13

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<400> 9
Gly Pro Val Pro Pro Tyr Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1      5      10      15
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20      25      30
Val Trp Ser Ile Asn Met Thr Ala Gly Val Tyr Cys Ala Ala Leu Glu
 35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50      55      60
Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65      70      75
Ser Leu Leu Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85      90      95
Asp Leu Leu Arg His Leu Arg Lys Leu Phe His Gln Gly Thr Phe Asn
100     105     110
  
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<210> 10
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

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<400> 10
Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1      5      10      15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
 35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
 50      55      60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65      70      75
Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
 85      90      95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn
100     105     110
  
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<210> 11
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

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<400> 11
Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
 1      5      10      15
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
 35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50      55      60
Met Leu Gly Gly Phe Cys Pro His Lys Phe Asn Asn Phe Thr Val Ser
 65      70      75
Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Thr
 85      90      95
  
```

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Lys Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys
 100 105 110
 Lys Leu Phe Arg Glu Gly Arg Phe Asn
 115 120

<210> 12
 <211> 133
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

<400> 12
 Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1 5 10 15
 Ala Ser His Leu Glu Gly Pro Val Pro Ser Thr Ala Leu Arg Glu
 20 25 30
 Leu Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
 35 40 45
 Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
 50 55 60
 Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
 65 70 75 80
 Glu Lys Thr Gln Arg Met Leu Gly Gly Phe Cys Pro His Lys Val Ser
 85 90 95
 Ala Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val
 100 105 110
 Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg
 115 120 125
 Glu Gly Arg Phe Asn
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<210> 13
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Murine IL-13

<400> 13
 Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu
 1 5 10 15
 Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
 20 25 30
 Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val
 35 40 45
 Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg
 50 55 60
 Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys Phe Asn Asn Phe
 65 70 75 80
 Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His Leu
 85 90 95
 Glu Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser
 100 105 110
 Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 115 120

<210> 14
 <211> 132
 <212> PRT
 <213> Artificial Sequence

<220>

seqlist.txt

<223> Chimaeric Murine IL-13

<400> 14

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu
20      25      30
Thr Leu Lys Glu Leu Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln
35      40      45
Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
50      55      60
Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
65      70      75      80
Asn Ala Ile Tyr Arg Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg
85      90      95
Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
100      105      110
Ala His Phe Ile Thr Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg
115      120      125
His Gly Pro Phe
130

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<210> 15

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Murine IL-13

<400> 15

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Val
20      25      30
Thr Leu Lys Glu Leu Ile Glu Glu Leu Thr Asn Ile Thr Gln Asp Gln
35      40      45
Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
50      55      60
Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
65      70      75      80
Asn Ala Ile Phe Arg Thr Gln Arg Ile Leu His Ala Leu Cys Asn Arg
85      90      95
Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
100      105      110
Ala His Phe Ile Thr Lys Leu Leu Thr Tyr Thr Lys Asn Leu Phe Arg
115      120      125
Arg Gly Pro Phe
130

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<210> 16

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo Sapien IL-13

<400> 16

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Tyr Val His Ser Asp Gly Ser Tyr Pro Lys Asp Lys Phe Glu Lys Ile
1      5      10      15
Asn Gly Thr Trp Tyr Tyr Phe Asp Ser Ser Gly Tyr Met Leu Ala Asp
20      25      30
Arg Trp Arg Lys His Thr Asp Gly Asn Trp Tyr Trp Phe Asp Asn Ser
35      40      45
Gly Glu Met Ala Thr Gly Trp Lys Lys Ile Ala Asp Lys Trp Tyr Tyr

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50          55          60
Phe Asn Glu Glu Gly Ala Met Lys Thr Gly Trp Val Lys Tyr Lys Asp
65      70      75      80
Thr Trp Tyr Tyr Leu Asp Ala Lys Glu Gly Ala Met Gln Tyr Ile Lys
85      90      95
Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Gly Val Met Val Ser Asn
100      105      110
Ala Phe Ile Gln Ser Ala Asp Gly Thr Gly Trp Tyr Tyr Leu Lys Pro
115      120      125
Asp Gly Thr Leu Ala Asp Arg Pro Glu Gly Pro Val Pro Pro Ser Ser
130      135      140
Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln
145      150      155      160
Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr
165      170      175
Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly
180      185      190
Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro
195      200      205
His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr
210      215      220
Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Val His Leu Lys
225      230      235      240
Arg Leu Phe Arg Gln Gly Thr Phe Asn
245

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<210> 17

<211> 220

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo Sapien IL-13

<400> 17

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Ser Ser His Ser Ser Asn Met Ala Asn Thr Gln Met Lys Ser Asp Lys
1      5      10      15
Ile Ile Ile Ala His Arg Gly Ala Ser Gly Tyr Leu Pro Glu His Thr
20      25      30
Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp Tyr Leu Glu
35      40      45
Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val Ile His Asp
50      55      60
His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe Pro His Arg
65      70      75      80
His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr Leu Lys Glu
85      90      95
Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Gly Pro Val Pro
100      105      110
Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr
115      120      125
Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile
130      135      140
Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn
145      150      155      160
Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala
165      170      175
Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val
180      185      190
Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Leu Val
195      200      205
His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn
210      215      220

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<210> 18

<211> 133

seqlist.txt

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo Sapien IL-13

<400> 18

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1          5          10          15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu
          20          25          30
Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
          35          40          45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
          50          55          60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
65          70          75          80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
          85          90          95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
          100          105          110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
          115          120          125
Gln Gly Thr Phe Asn
          130

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<210> 19

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo Sapien IL-13

<400> 19

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1          5          10          15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Ile
          20          25          30
Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
          35          40          45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
          50          55          60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
65          70          75          80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
          85          90          95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
          100          105          110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
          115          120          125
Gln Gly Thr Phe Asn
          130

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<210> 20

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo Sapien IL-13

<400> 20

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Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1          5          10          15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met

```


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```

      20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
      50      55      60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
      85      90      95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Arg Phe Asn
      100      105      110

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<210> 21
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

```

<400> 21
Gly Pro Val Pro Pro Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
1      5      10      15
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
      20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
      50      55      60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
      85      90      95
Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Gln Gly Thr Phe Asn
      100      105      110

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<210> 22
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

```

<400> 22
Gly Pro Val Pro Pro Ser Ser Ala Leu Arg Glu Leu Ile Glu Glu Leu
1      5      10      15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
      20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Asp Lys Thr Gln Arg
      50      55      60
Met Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
      85      90      95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Asp Gly Arg Phe Asn
      100      105      110

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<210> 23
 <211> 1260
 <212> DNA
 <213> Artificial Sequence

seqlist.txt

<220>

<223> Plasmid pCDNmIL13CDFC

<400> 23

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aaccgtcaga tcgcctggag acgccatcga attcgggtacc gccaccatgg cgctctgggt 60
gactgcagtc ctggctcttg cttgccttgg tggctctgcc gcccagggc cggtgccacg 120
ttctgtgtct ctccctctga cccttaagga gcttattgag gagctgagca acatcacaca 180
agaccagact cccctgtgca acggcagcat ggtatggagt gtggacctgg ccgctggcgg 240
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gttgctgtgt cctaaagtat ctgctagtca tttagaagat accaaaatcg aagtagccca 420
ctttattaca aaactgctca gctacacaaa gcaactgttt cgccacggcc cttcctgga 480
ggtcctgttc cagggaccag gatccgagcc caaatcggcc gacaaaactc acacatgcc 540
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caaggacacc ctcatgatct cccggacccc tgaggtcaca tgcgtgggtg tggacgtgag 660
ccacgaagac cctgaggtca agttcaactg gtacgtggac ggcgtggagg tgcataatgc 720
caagacaaag ccgctggagg agcagtacaa cagcagctac cgtgtgggtc gcgtcctcac 780
cgtcctgcac caggactggc tgaatggcaa ggagtacaag tgcaaggctc ccaacaaagc 840
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seqlist.txt

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<220>
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<400> 27
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<210> 28
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<220>
<223> primer

<400> 28
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seqlist.txt

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seqlist.txt

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seqlist.txt

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seqlist.txt

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